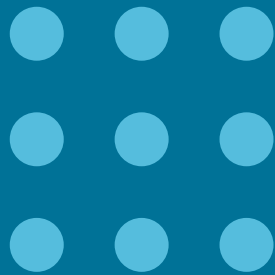




Economic Growth In A Networked Age

Norman Jacknis
May 10, 2011





Where We're Coming From



What leads to economic growth?

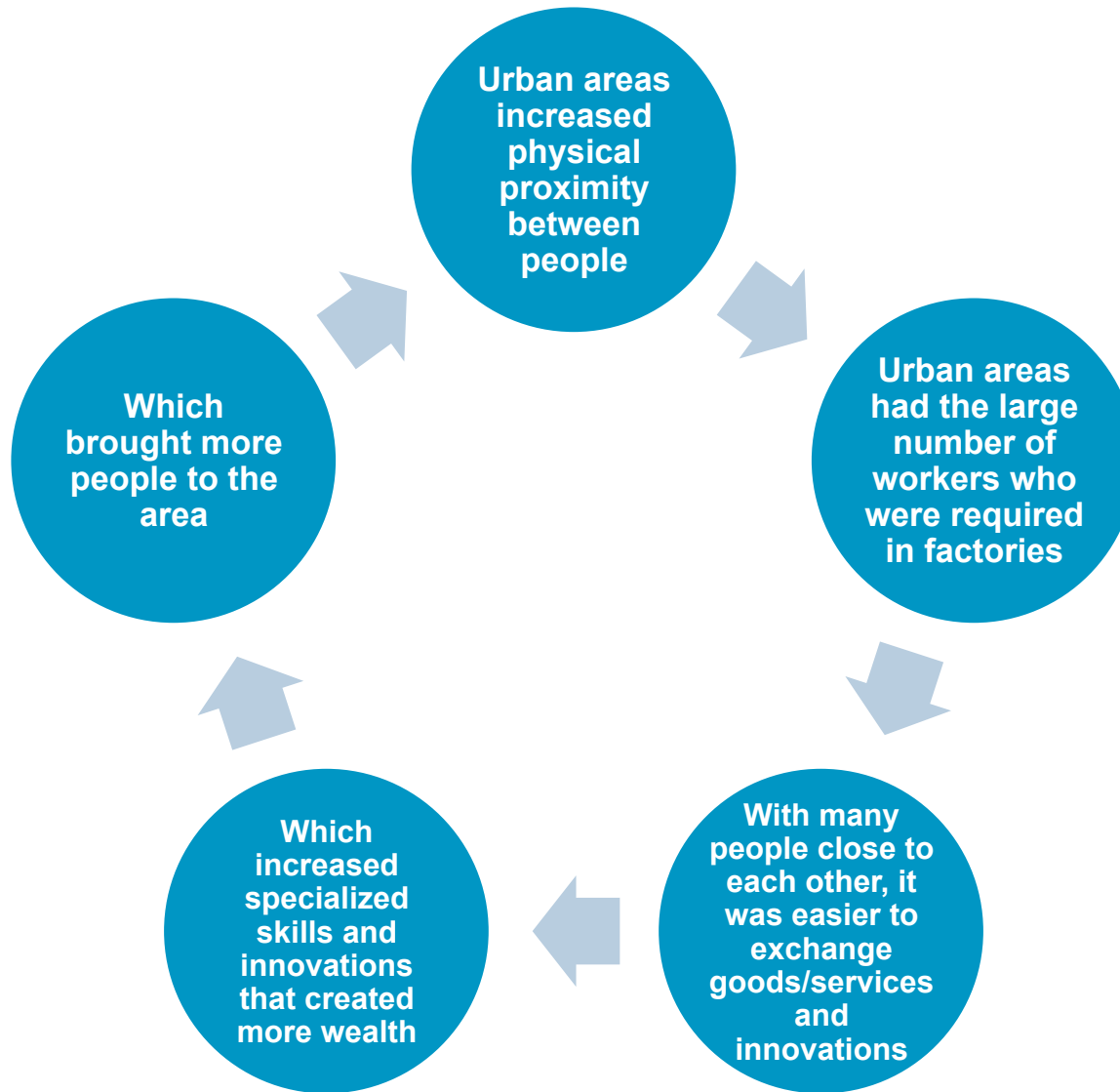
Differentiation of the skills of people so everyone is producing the most for society

Creation of new knowledge and innovations, which results in new products/services or enhances productivity in producing existing products/services

These, in turn, depend upon communications and collaboration among many, diverse people



Why urban areas became engines of wealth



Employment Trends: 1900 to 2000

Thousands of employees and percent of total

	Employment 1900	Employment 2000	Percent 1900	Percent 2000
Agriculture	11,680	3,281	43.5 71%	2.4
Goods	7,252	25,710	27.0	18.8
Services	6,832	85,370	25.4	62.5 79%
Government	1,094	22,131	4.1	16.2
Total	26,858	136,492	100.0	100.0



Where did all the office workers go?



“If I can make it in New York, I'll make it anywhere”



“Today, 36 percent of daily trades in stocks that are listed on the New York Stock Exchange are actually executed on the exchange, down from about 75 percent nearly four years ago. The rest of are conducted elsewhere, on new electronic exchanges ... half of the jobs there have disappeared over the last five years ...

“Unlike the Big Board, the new electronic exchanges are virtually unknown outside financial circles. Direct Edge, the largest, is in Jersey City. Another, the BATS Exchange, is based in Lenexa, Kan [picture above]. Both are only about five years old. But each now accounts for about a 10th of daily United States stock trading. “ – October 15, 2009 New York Times Front News Page



“New Global Outsourcing Hub - Wyoming?”



July 5, 2010 (CNN) -- When it comes to call centers filled with English-speaking employees, India likely comes to mind. Not a tiny town in Wyoming called Ten Sleep, population about 300.

Instead, the town is home to a teaching center that is open 24 hours a day, seven days a week. There, American teachers provide real-time video English lessons to thousands of students in classrooms across Asia via high-speed fiber optic networks.



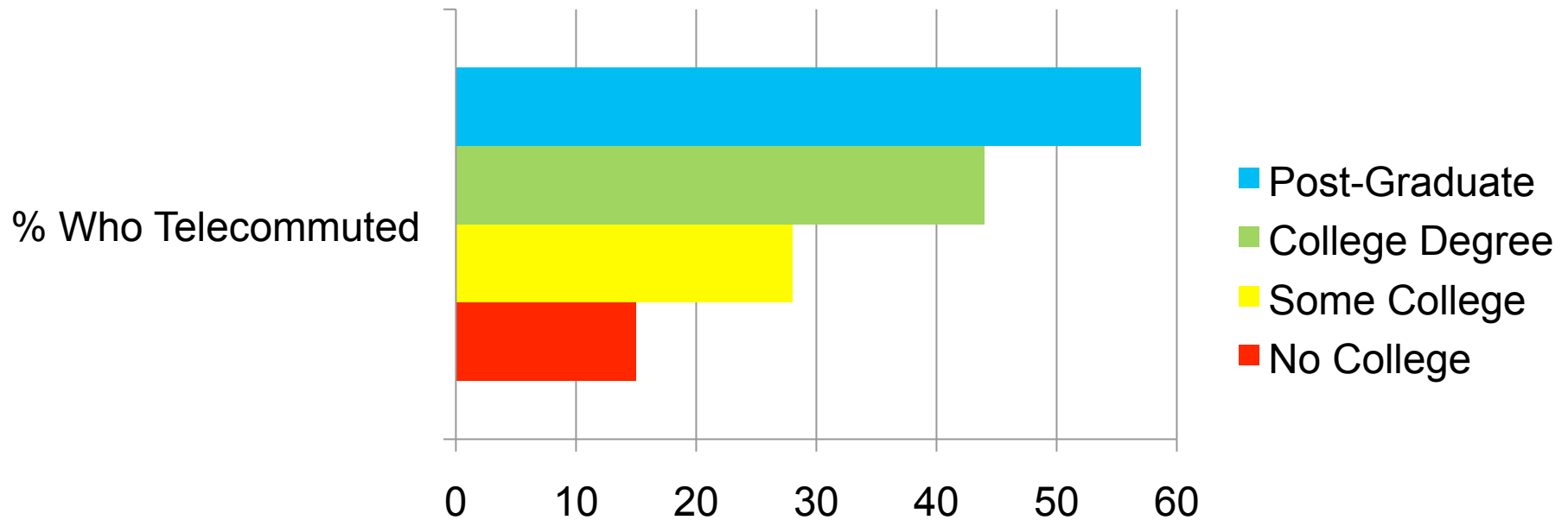
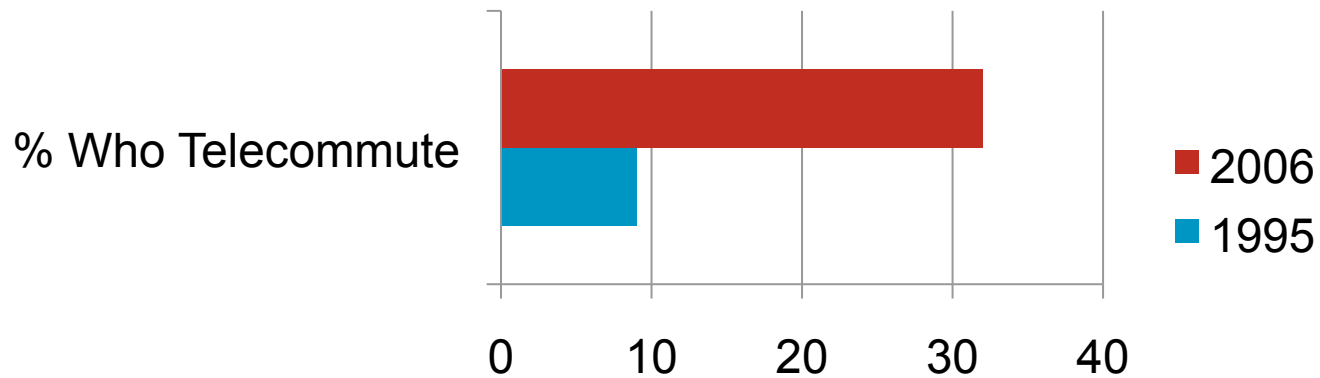
Business support services become accessible around the globe

Business support services will become within reach of people in more locations than in the past ...

From any other part of the globe to people here



One in three U.S. workers have telecommuted to work [2006]



The Home Office



**A communications
network revolution**

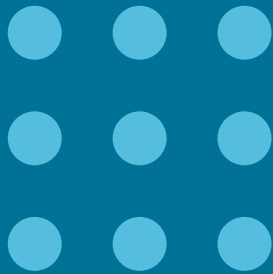
Internet growth

Broadband growth

Video growth



Assessing The Economic Benefits Of Broadband



Direct Benefits To Businesses [UK]

A study on the impact of broadband on UK firms prepared for the OECD showed a strong correlation between broadband adoption, automated business links and an increase in productivity:

‘...average productivity of firms with multiple [automated business] links is higher than for firms without any links. ...firms with one automated business link and broadband are 31 per cent more productive than their counterparts without broadband, and firms with five or more multiple links and broadband are 22 per cent more productive than similar firms without broadband.’

‘...early adopters were indeed more productive by 22 per cent and early adoption strengthened this advantage. Broadband used in conjunction with multiple automated business links also has a favourable impact on labour productivity.’

‘...a 10 per cent increase in broadband Internet enabled workforce raises productivity by up to 12 per cent in IT intensive sectors.’

The Economic Effects Are Not Linear

- An independent case study looking at the consumer surplus associated with broadband penetration found that consumer benefit of broadband for the EU-15 where there was 70 per cent household penetration would create a ... one per cent of annual contribution to GDP for the EU 15.
- However, this increased to ... 1.6 per cent GDP, with a penetration rate of 90 per cent, suggesting that the consumer surplus increases with penetration on more than a proportional basis due to strong network effects.



Data On Broadband's Economic Impact [SNG]

- The real benefits of FTTP (fiber to the premises) are more than about doing the same things faster. There are direct benefits from the transformative effects of fiber due to the reliability of FTTP that enables the adoption of new processes that transform business operations.
- In addition to such effects, there are economic multiplier effects (increases in GDP, jobs, tax revenues) that can be calculated. In SNG's research since 2003, we have found significant increases in local economic activity attributable to broadband.
- In fact, **the increase in local GDP is more than ten-fold the value of the investments in broadband infrastructure.**



Effects Of Broadband Deployment On Output and Employment [Brookings]

- We find that non-farm private employment and employment in several industries is positively associated with broadband use

For every one percentage point increase in broadband penetration in a state, employment is projected to increase by 0.2 to 0.3 percent per year.

That one percentage point increase — equal to roughly 3 million lines — is associated with nearly 300,000 more jobs

- Broadband-related job growth occurs in both the manufacturing and services sector, with especially strong impacts in financial services, education, and health care.
- Internet business solutions will add 0.43 percentage points to future productivity growth through 2011



Tourism Benefits In Greece [2008]

- **Attract business travelers**

 - More than 40% of business travelers require broadband internet access

- **Attract tourists**

 - hotels with high-speed access are highlighted by travel agencies

- **Increase events celebration**

 - company meetings and forums require high-speed access and contents for attendees

- **Increase tourists satisfaction due to seamless access to information and services**

 - return to Herakleio and increasing stay-days

- **New jobs created**

 - decreased unemployment



D & K Bait Bags



Debora and Kenneth Samson run a business out of their home in the village of Little Anse. Fishing has been a tradition in this region of Isle Madame on the south coast of Cape Breton Island since the 1500s. While net making and mending is as old as the community, the bait bags Kenneth invented are new. They hold bait inside lobster and crab traps, safe from predators.

The Samsons have a good local customer base and every year, through word of mouth, they get a few more customers. Now, with high-speed Internet access, they have built a website, www.baitbags.ca, to showcase their products and expand their business. With the world at her fingertips, Debora sees no limit to how much business can grow.



**We Ain't Seen
Nothin' Yet**



Videoconferencing is a “game changer” – and we are only at the start now



The number of Telepresence systems will grow to 36,371 in 2013.

By 2013, global online video will be 60% of consumer Internet traffic up from 32 percent in 2009.



It's almost like being there



Not yet today, but by 2030

A world of ubiquitous, high quality visual communication and easy collaboration, enabling anyone anywhere to virtually meet anyone else anywhere else.

Where the majority of economic activity is no longer bound to a farm, factory or even a dedicated office building

The laws of economics will not change

Differentiation of the skills of people so everyone is producing the most for society

Creation of new knowledge and innovations, which results in new products/services or enhances productivity in producing existing products/services

These, in turn, will still depend upon communications and collaboration among many, diverse people

What changes is that physical proximity will no longer be the only or dominant way to connect people

Big companies will no longer be the source of lots of jobs and growth



The monolithic integrity of the 20th century company has also been breaking down:

- Global supply chains
- Outsourcing
- Contractors instead of employees
- Global presence instead of one main location

The individual increasingly becomes the key unit of economic activity



As the costs of coordinating activity goes down, more small and flexible teams are likely

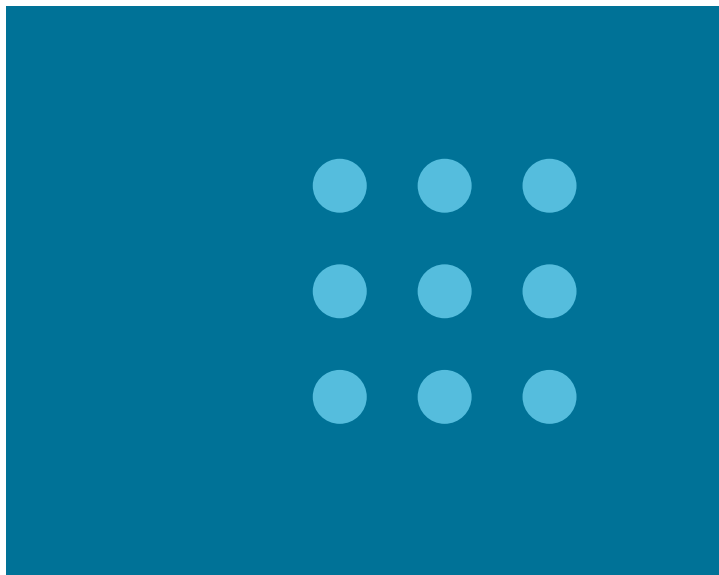
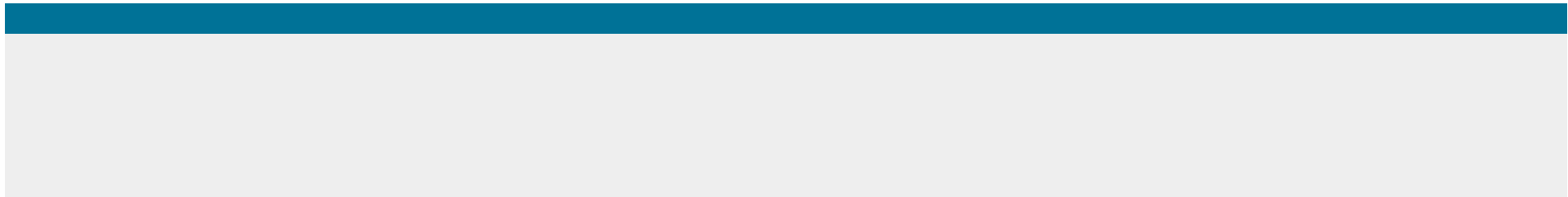
More individuals will have more choice in where they live since they can take their economic activity wherever they go

This is the key economic strategy question for local leaders in 2030:

When most people can work anywhere, where will they choose to live and work?

The communications revolution and changes in the nature of work will present a challenge to traditional thinking, but also an opportunity to create a new kind of American regional economy.





Quality Of Life



Many people will choose where to live based on quality of life



What you have done to attract tourists is a good start. In the future, those attractions will be what attracts people to live and stay on the Cape.



People Will Live Anywhere If They Can Get Quality Health Care



Telehealth and telecare make even remote areas viable

Sometimes, all it takes is a bit of imagination on the part of physicians and public leaders



Remote Diagnosis



**Especially
for massive
amounts of
data, such
as Radiology
PACS**



Remote Consultation



Health Presence allows patients to remotely connect with doctors and clinicians for an encounter that rivals a face-to-face meeting



Remote Surgery



Health Maintenance For Chronic Diseases



Health Maintenance For Seniors Who Are Generally Healthy



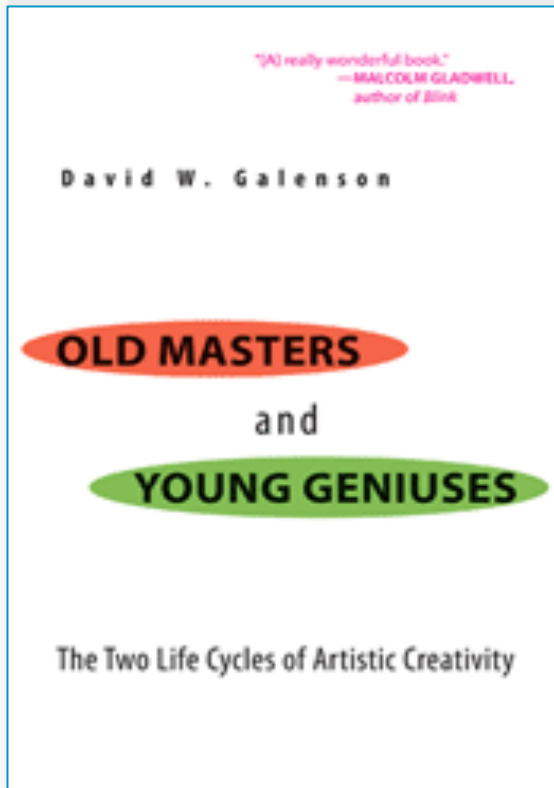
The Vermont Telecare for Rural Health Project

- **Two-way interactive exercise class for seniors.**
- **"We know that exercise is helpful for senior patients, but we can't get to them. And we know that Tai Chi helps keep seniors healthy, increases their well-being and balance."**

-- M. Sifrey, F2C 2009



In A Knowledge Economy Innovators Will Do Best



“Creativity can be divided into these types -- conceptual and experimental.”

Galenson “brings together a vast array of evidence to better understand the nature of creative production over time”

“ at the not-so-tender age of 55, [he] has fashioned something audacious and controversial: a unified field theory of creativity. Not bad for a middle-aged guy.”

LATE BLOOMERS

Why do we equate genius with precocity?

by Malcolm Gladwell



Overcoming Obstacles To A Full Life

- **Lack of mobility**

Not as necessary with virtual mobility

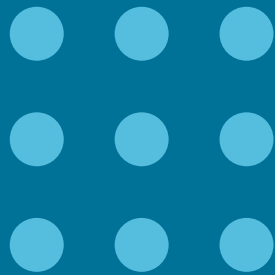
- **Presumed loss of memory**

Intelligent devices remind everyone of their tasks now

With search tools and data bases, do we need to remember everything?

- **Poor health**

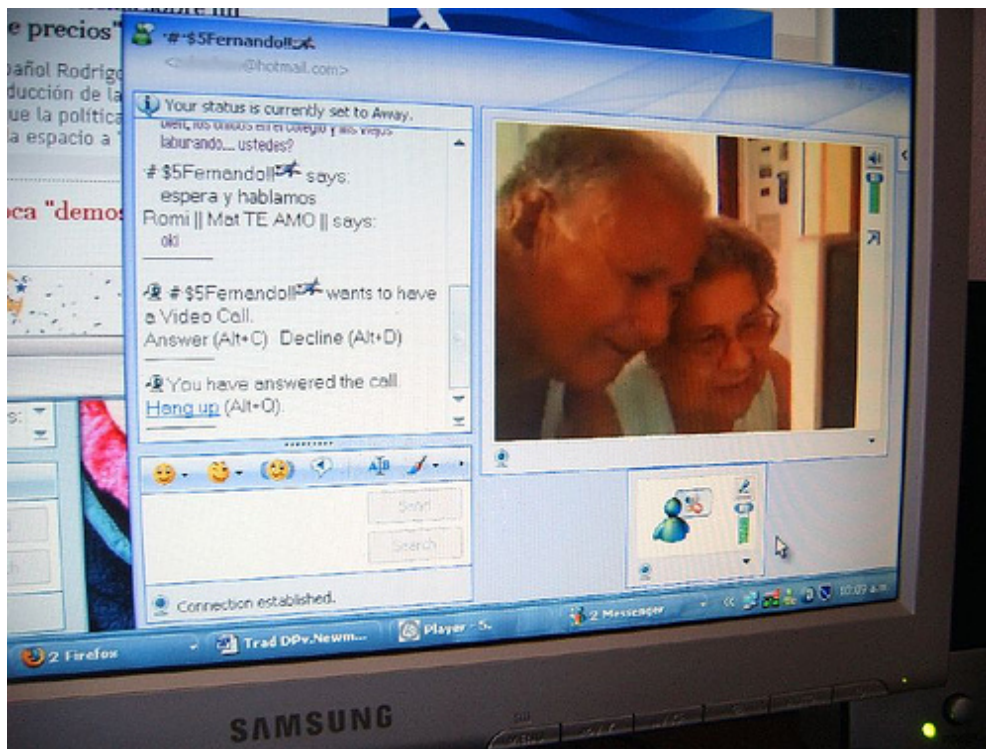
Catch problems quicker so they can be treated quicker



**Quality Of Life
Includes
The Social And
Citizen Experience**



Will Your Citizens Be Bonding With The Grandkids?



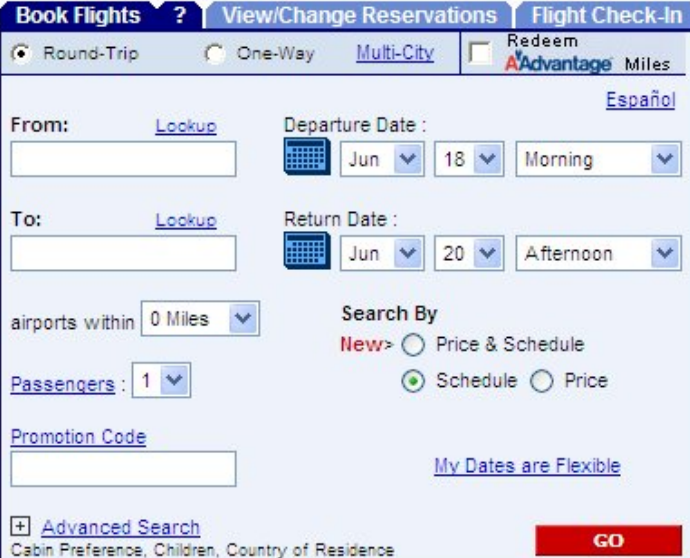
- Using an Internet video connection?
- And wondering why they can't reach someone from the government the same way

After business hours

And with a public employee who might want to work at home "after hours"

Are They Saving \$ For Some Business?

- Are they doing data entry for a bank or an airline
For no pay, which saves the business money
But, for a reduced price



The screenshot shows a flight search interface with the following elements:

- Navigation tabs: **Book Flights** (selected), **View/Change Reservations**, **Flight Check-In**
- Search type: **Round-Trip** (selected), **One-Way**, **Multi-City**
- Redeem **Advantage Miles** checkbox
- Language: **Español**
- From: [Lookup](#)
- Departure Date: Jun 18 Morning
- To: [Lookup](#)
- Return Date: Jun 20 Afternoon
- airports within: 0 Miles
- Search By: Price & Schedule, Schedule, Price
- Passengers: 1
- Promotion Code:
- [My Dates are Flexible](#)
- [Advanced Search](#)
- Footer: Cabin Preference, Children, Country of Residence
- GO** button

- Why can't your government do the same thing?
Reduce its costs
By having its citizens serve themselves

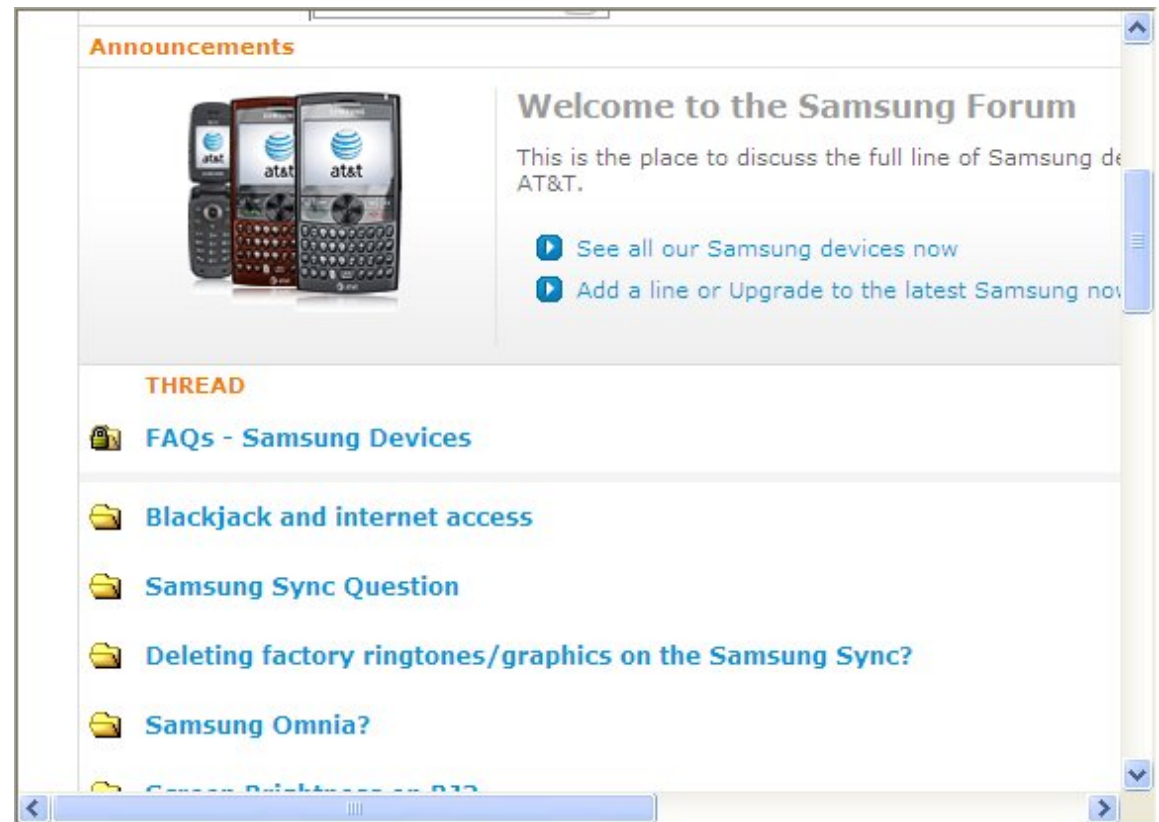
Are They Helping Others With Problems?

- **By offering free advice and even criticism about products they've bought?**

On a website created by the company that made that product

Because the company knows its consumers are better and more credible at solving problems than it is

But the company still benefits by getting feedback and ultimately more satisfied consumers



Are They Helping Others With Problems?

- **Why are you trying to do it all just with paid civil service staff?**

Costing money?

Inconveniencing your constituents?

And they're still not happy then when the problem is solved because of what they went through!



Some Examples Of Citizen-to-Citizen Services – Old And New



FixMyStreet

[Report a problem](#) [All reports](#) [Local alerts](#) [Help](#) [Contact](#)

Damaged footpath


Reported in the Pavements/footpaths category by D McNeillis at 00:13 today
Sent to Worcestershire County Council 2 minutes later

The footpath is damaged and my children find it difficult to roller skate as the surface is uneven



[Offensive? Unsuitable? Tell us](#)





or [Login / Join Twitter!](#)


Select Language ...

Hey there! **LAFD** is using Twitter.

Twitter is a free service that lets you keep in touch with people using the web, your phone, or IM. [Join today](#) to start receiving **LAFD's** updates.

Join today!

Already using Twitter via SMS or IM? [Finish signing up.](#)



LAFD

UPDATE: 4762 Galendo St
Knockdown: 86 FF's took just 1 hour;
Confined to structure; No injury; NFD
- Brian Humphrey####

About

Name LA Fire Department
Location Los Angeles, CA USA
Web <http://LAFD.ORG/A>
Bio A full-spectrum life safety agency protecting the City of Los Angeles



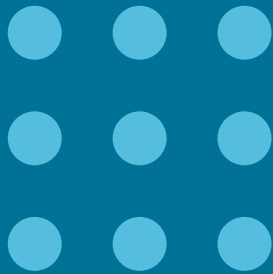
Virtual Citizen-to-Citizen Services



THE UNIVERSITY OF THE THIRD AGE



What Is Your Broadband-based Economic Growth Strategy?



Connect residents to the global economic growth ecosystem



In a networked world, the business services that support entrepreneurs and innovators will become much more widely available

The best university research will be available through the network

Even capital will flow globally and be widely available

To support local economic growth, it will be necessary to make sure that entrepreneurs are connected to these services and funds.

The most important learning will be after people are no longer in classrooms

Unlocking Knowledge,
Empowering Minds.

Free lecture notes, exams,
and videos from MIT.
No registration required.

> Learn more

"When I realized I could follow along with an MIT course... I thought, 'I can handle this!'"

Ali Sheikh
Student
United States

> Read more

You **Tube**

eHowTM
How To Do Just About Everything

ASK a Librarian
Real People. Real Help. Real Fast!

vimeo

Join **vimeo**

Switch On The Code Tutorials 



Living in a blended physical & virtual world

**Even the physical
world will
become
intermixed with
the virtual**

**Zoning, planning,
building codes
need a 21st
century “refresh”**



Have A Strategy For Broadband-based Economic Development

- **Identify the businesses that are most important in your community**
 - Determine in what ways they can use broadband
 - Focus on those that would see the quickest and greatest benefits
- **Identify the local businesses that have the greatest growth potential**
 - Make sure they are covered by broadband
 - The true “anchor tenant” strategy
- **Identify businesses that would be interested in locating locally, if broadband existed**



Help Businesses To Ramp Up Faster

- **E-commerce training and assistance for web development**
- **Cyber Extension Service**
 - Even consider using young people
- **Building links to other areas for common development**
- **Free video conferencing**
- **Your ideas?**



The New Equation

$$e = (mc)^2$$

**Enhancement of life experience
results from **more connectivity**
which leads to **more choices.****

Thank You & Now A Conversation

